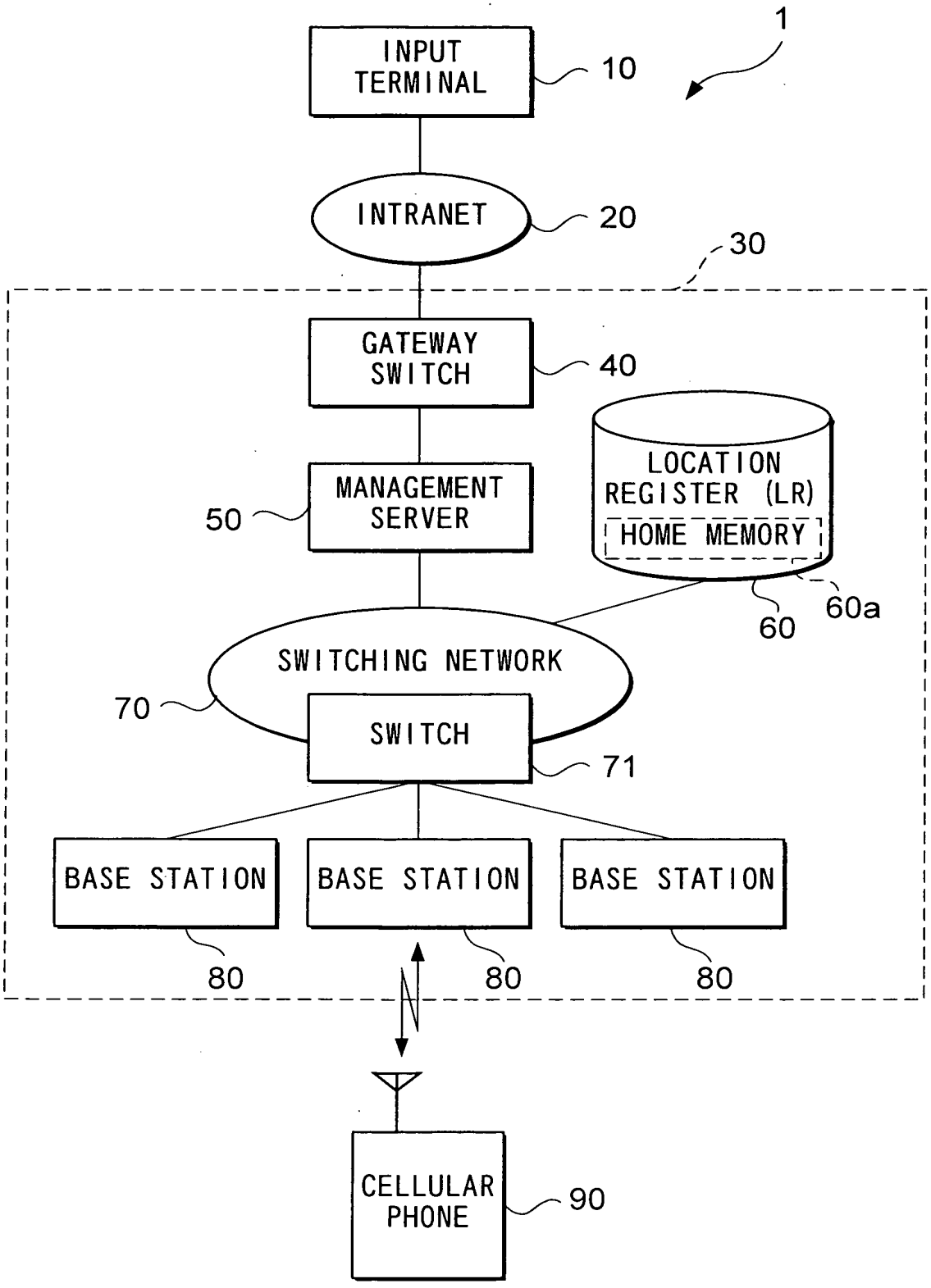
FIG. 1


1
INPUT TERMINAL
10
INTRANET
20
30
GATEWAY SWITCH
40
LOCATION REGISTER (LR)
HOME MEMORY
60a
60
MANAGEMENT SERVER
50
SWITCHING NETWORK
70
SWITCH
71
BASE STATION
BASE STATION
BASE STATION
80
80
80
CELLULAR PHONE
90

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FIG. 2

MOBILE STATION USAGE CATEGORY NO.	MOBILE STATION CHARACTERISTICS	LOCATION AREA
1	STATIC, OR LIMITED MOVEMENT AREA	SMALL ⟷ LARGE
2	INTERMEDIATE-SIZE MOVEMENT AREA, HIGH INCOMING CALL FREQUENCY	
3	INTERMEDIATE-SIZE MOVEMENT AREA, LOW INCOMING CALL FREQUENCY	
4	WIDE MOVEMENT AREA	
5	WIDE AND RAPID MOVEMENT (TRAIN OR HIGHWAY)	

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FIG. 3

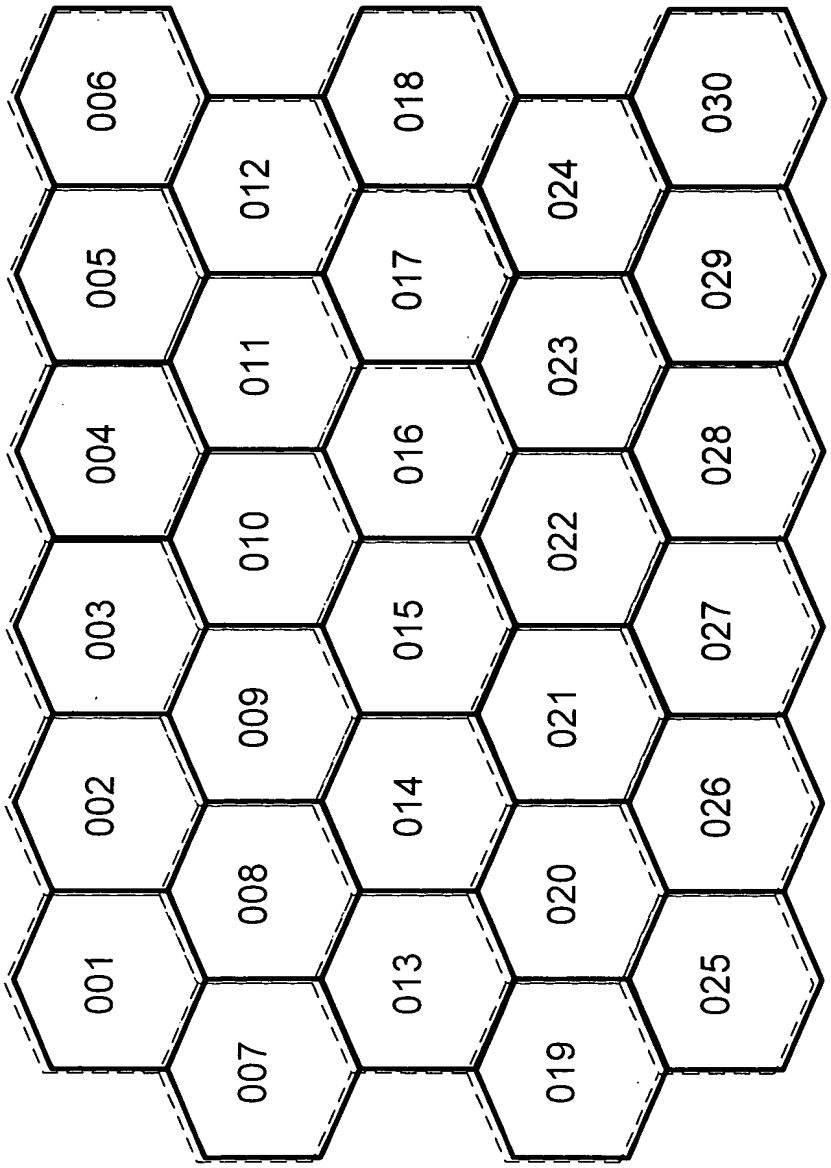
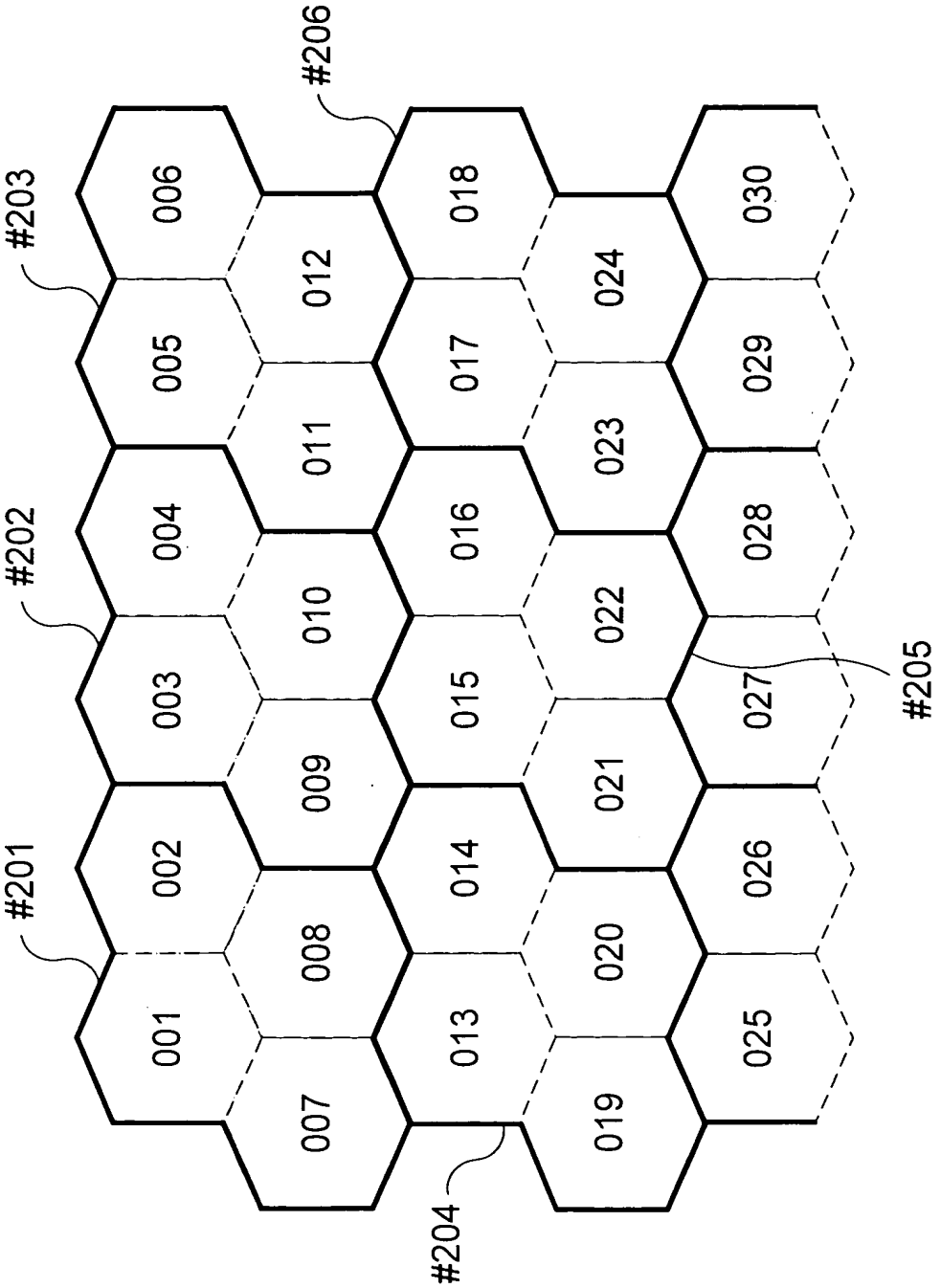
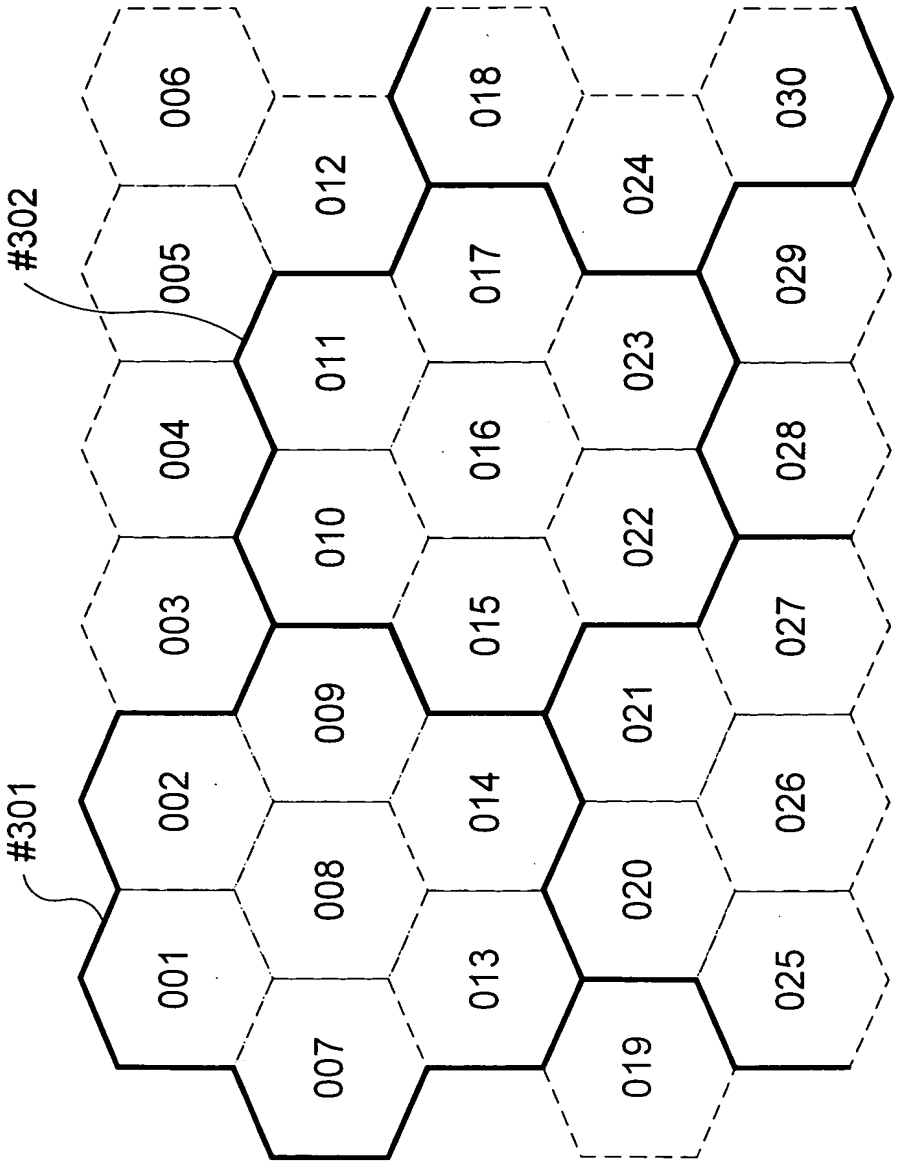


FIG. 4


#201
#202
#203
#204
#205
#206
001
002
003
004
005
006
007
008
009
010
011
012
013
014
015
016
017
018
019
020
021
022
023
024
025
026
027
028
029
030

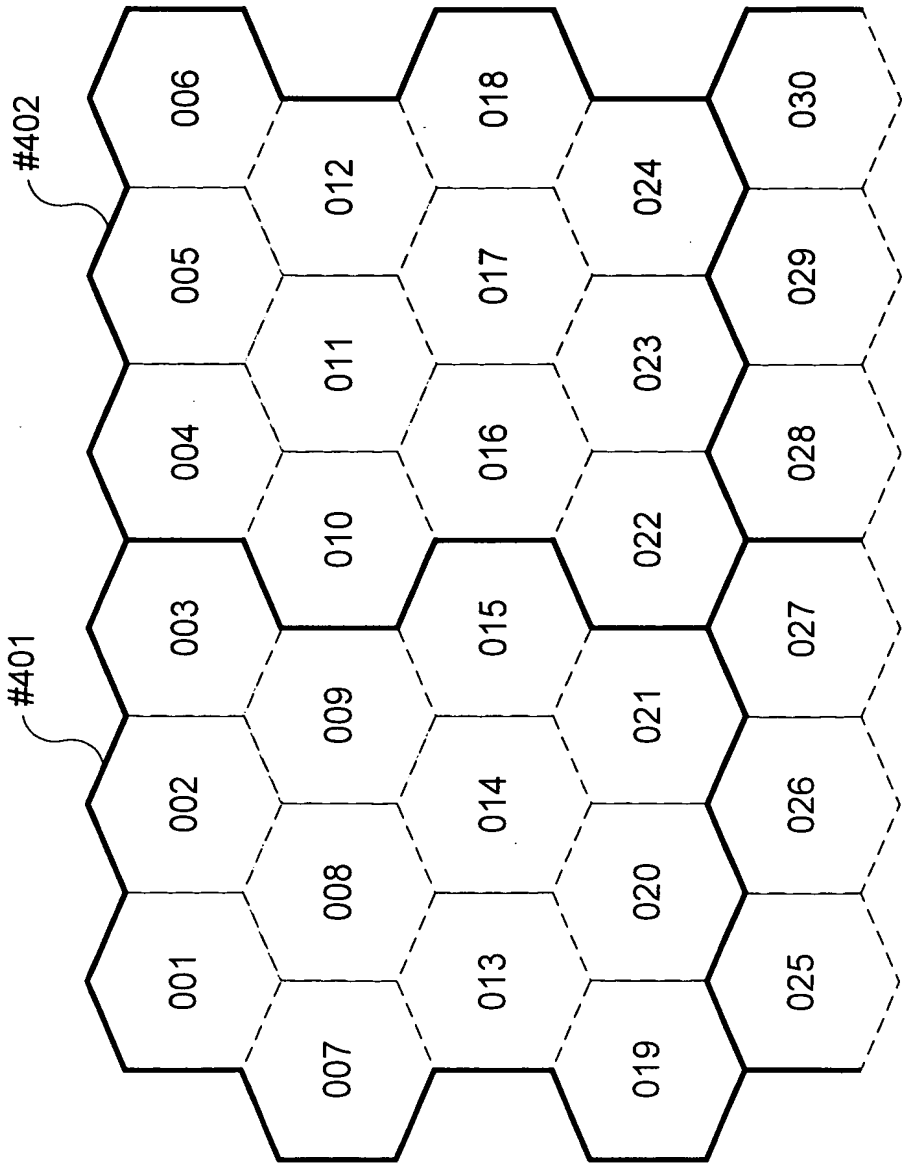
TOKYO 4525650

FIG. 5



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FIG. 6



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FIG. 7

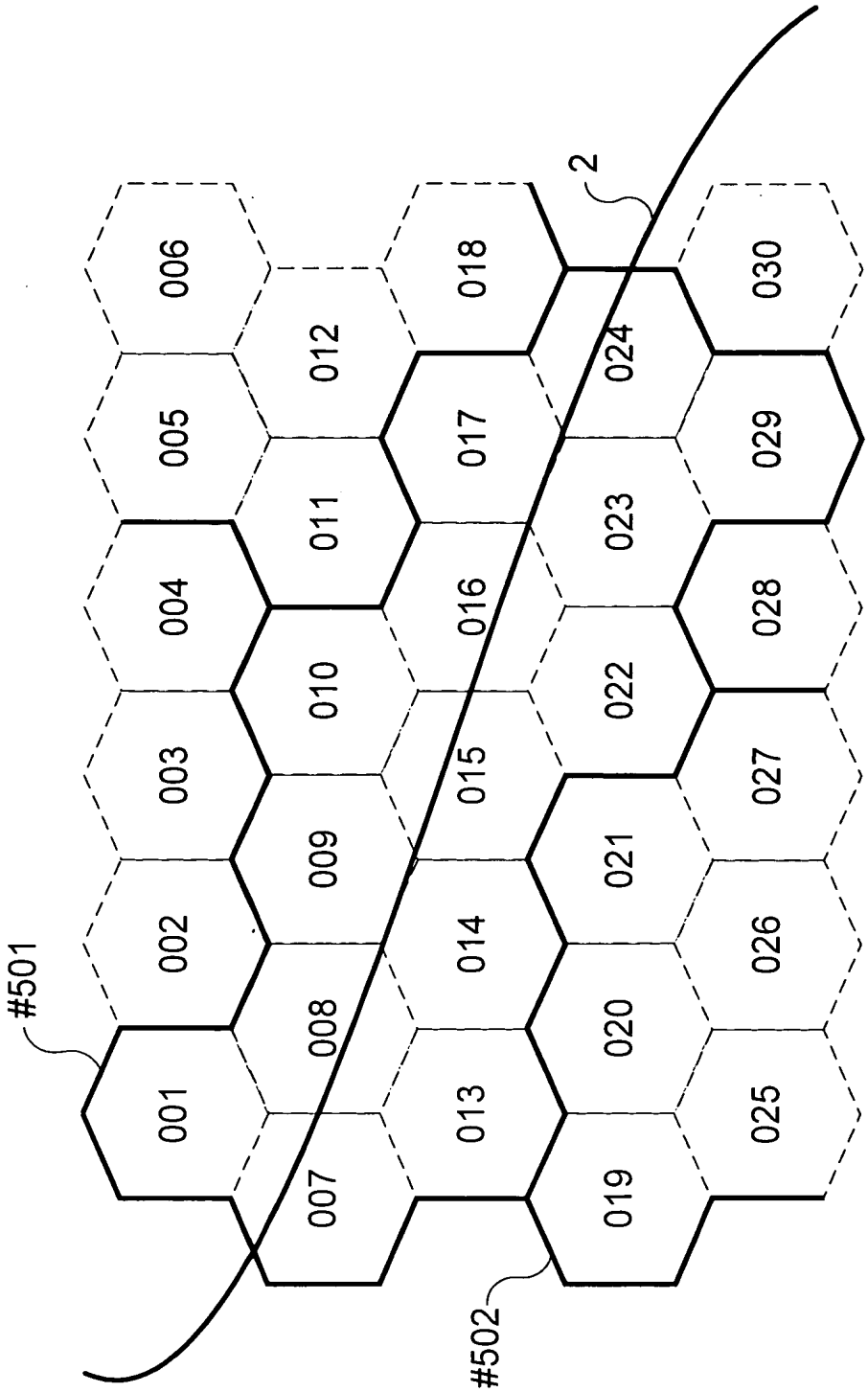


FIG. 8

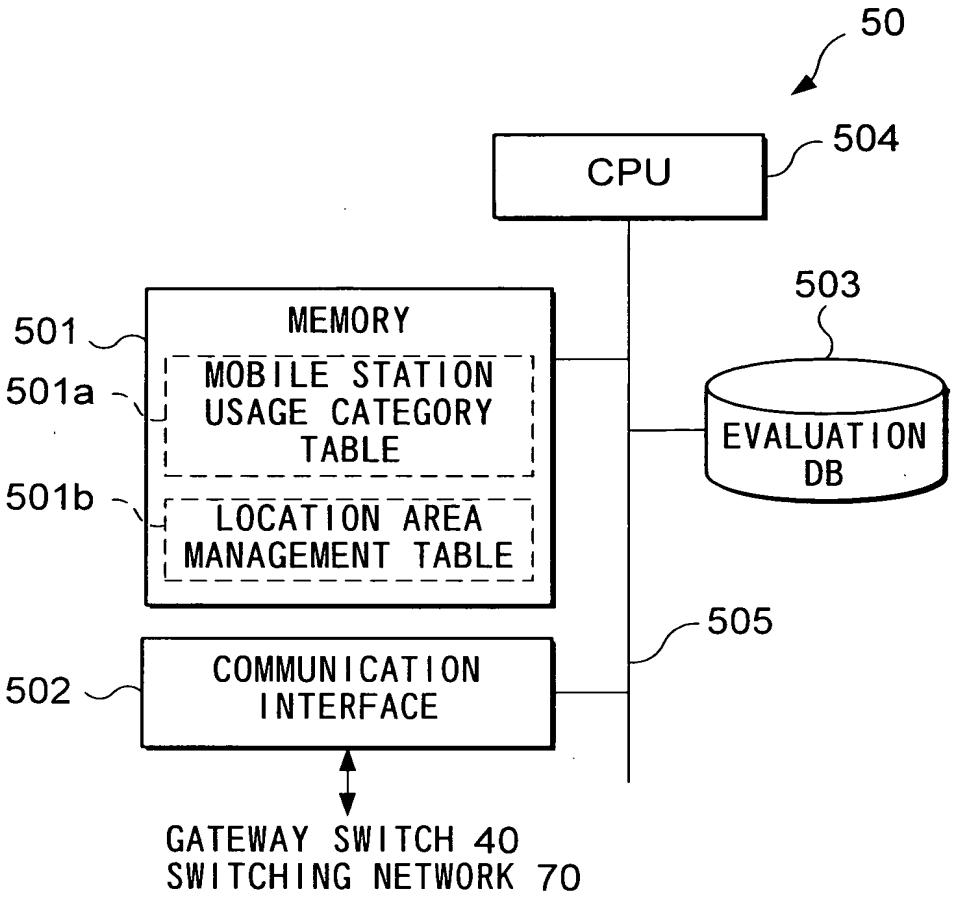


FIG. 9

501a

MOBILE STATION ID	MOBILE STATION USAGE CATEGORY NO.
090-1000-0001	2
090-1000-0002	1
090-1000-0003	3
⋮	⋮

FIG. 10

501b

MOBILE STATION USAGE CATEGORY NO.	LOCATION AREA ID	SWITCH ID
1	LOCATION AREA ID = SWITCH ID	
2	#201	001、002、007、008
	#202	003、004、009、010
	#203	005、006、011、012
	#204	013、014、019、020
	#205	015、016、021、022
	⋮	⋮
3	#301	001、002、007、008、009、013、014
	#302	010、011、015、016、017、022、023
	⋮	⋮
4	#401	001、002、003、007、008、009 013、014、015、019、020、021
	#402	004、005、006、010、011、012 016、017、018、022、023、024
	⋮	⋮
5	#501	001、007、008、009、010、013、014 015、016、017、022、023、024、029
	#502	019、020、021、025、026、027 ……
	⋮	⋮

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FIG. 11

60a

MOBILE STATION ID	LOCATION AREA ID
090-1000-0001	#201
090-1000-0002	008
090-1000-0003	#302
⋮	⋮

FIG. 12

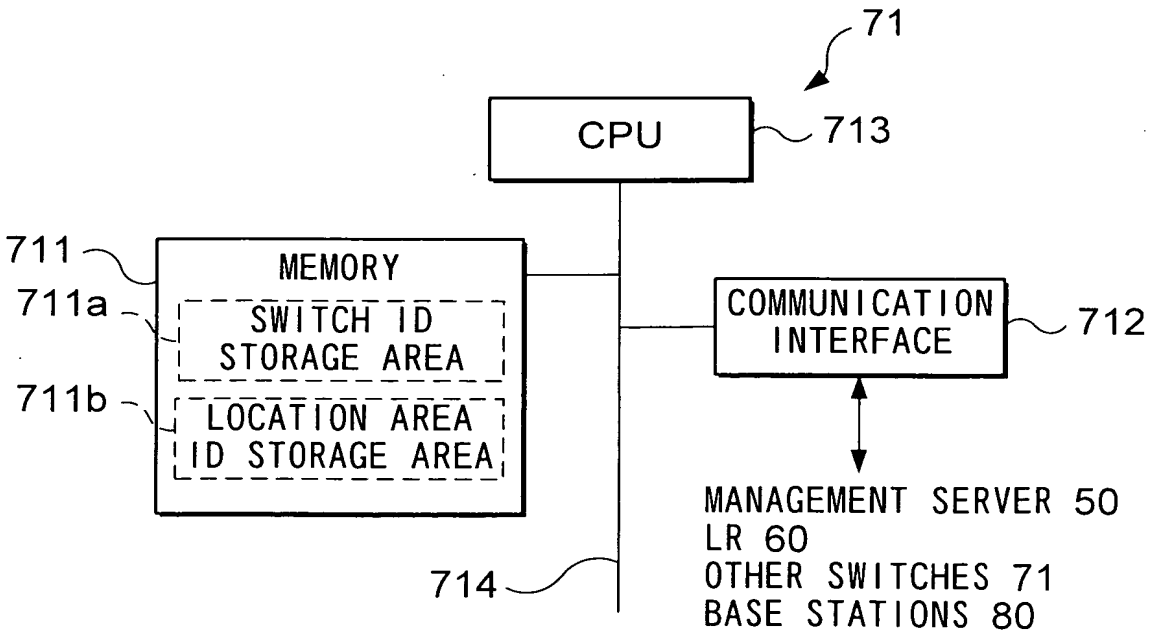


FIG. 13A

711a

SWITCH ID (MOBILE STATION USAGE CATEGORY NO. 1)	015

FIG. 13B

711b

MOBILE STATION USAGE CATEGORY NO.	LOCATION AREA ID
2	#205
3	#302
4	#401
5	#501

FIG. 14

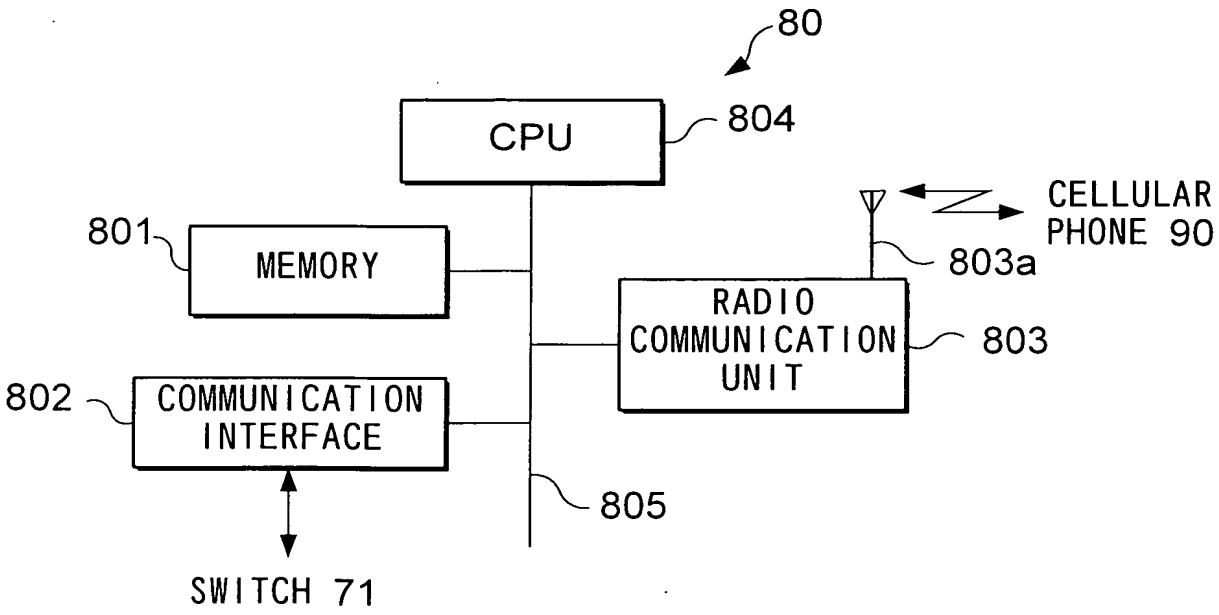
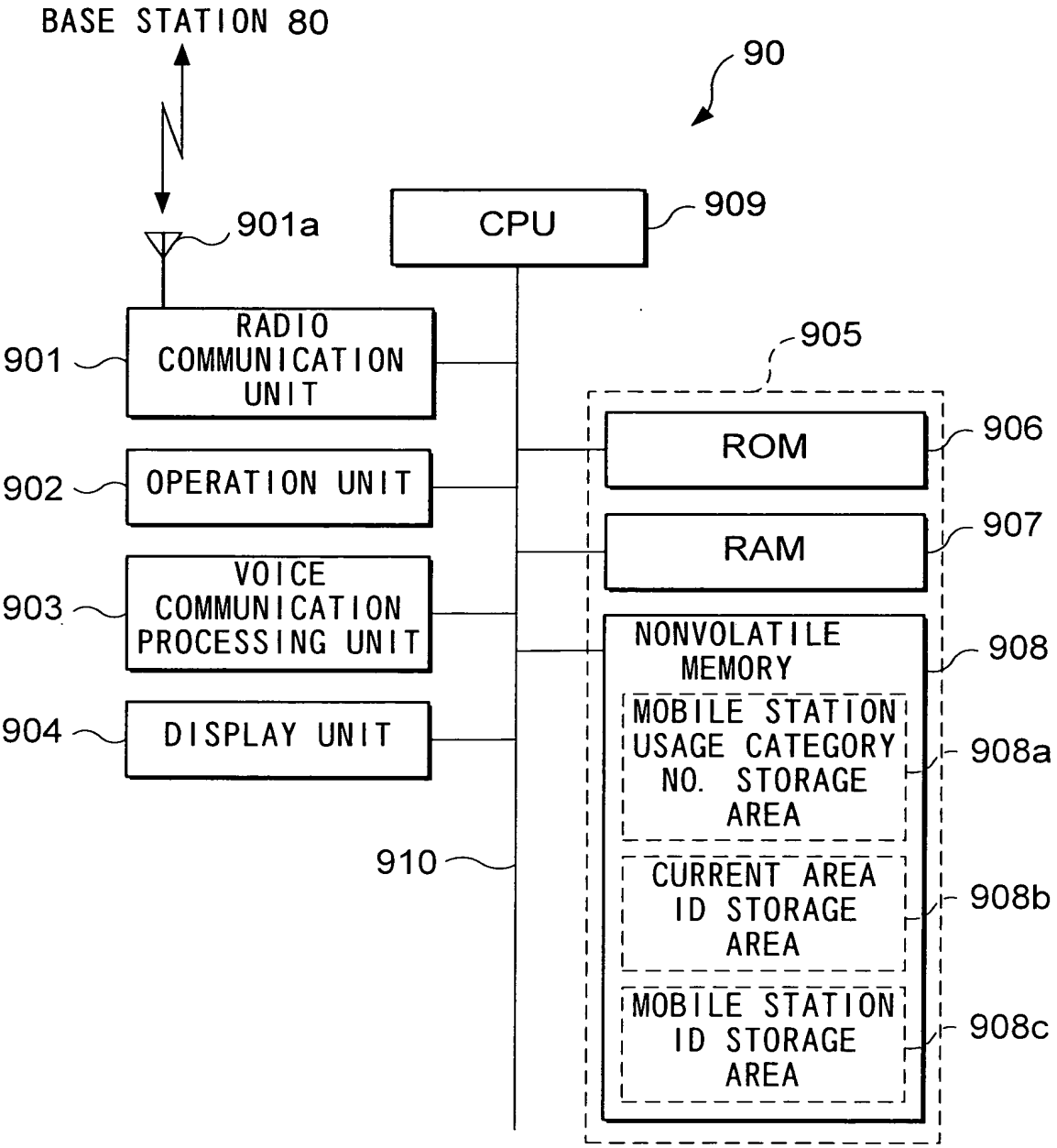
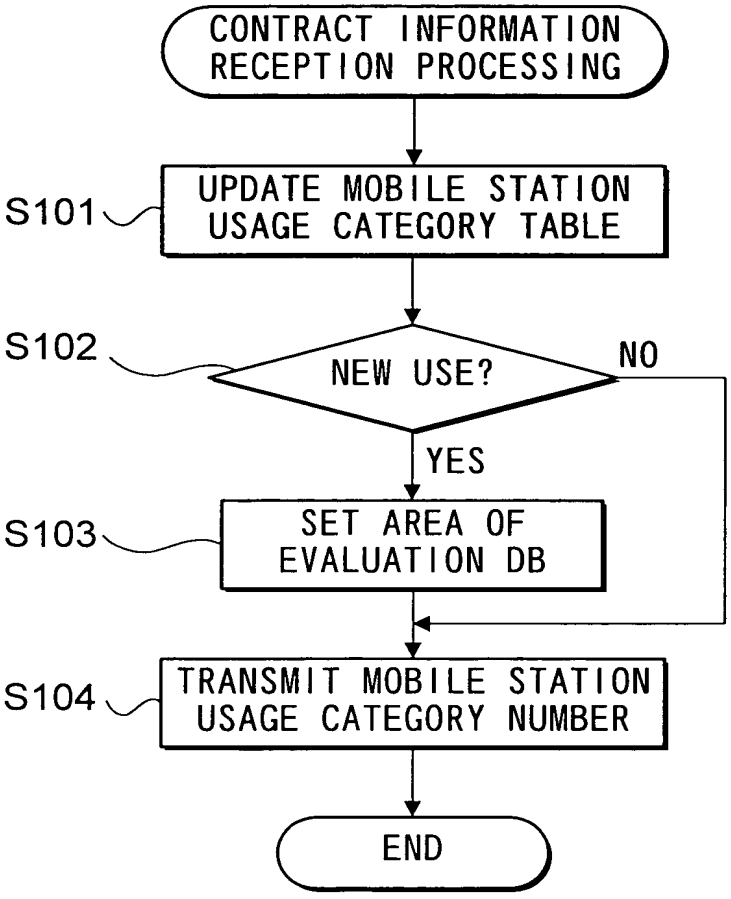


FIG. 15



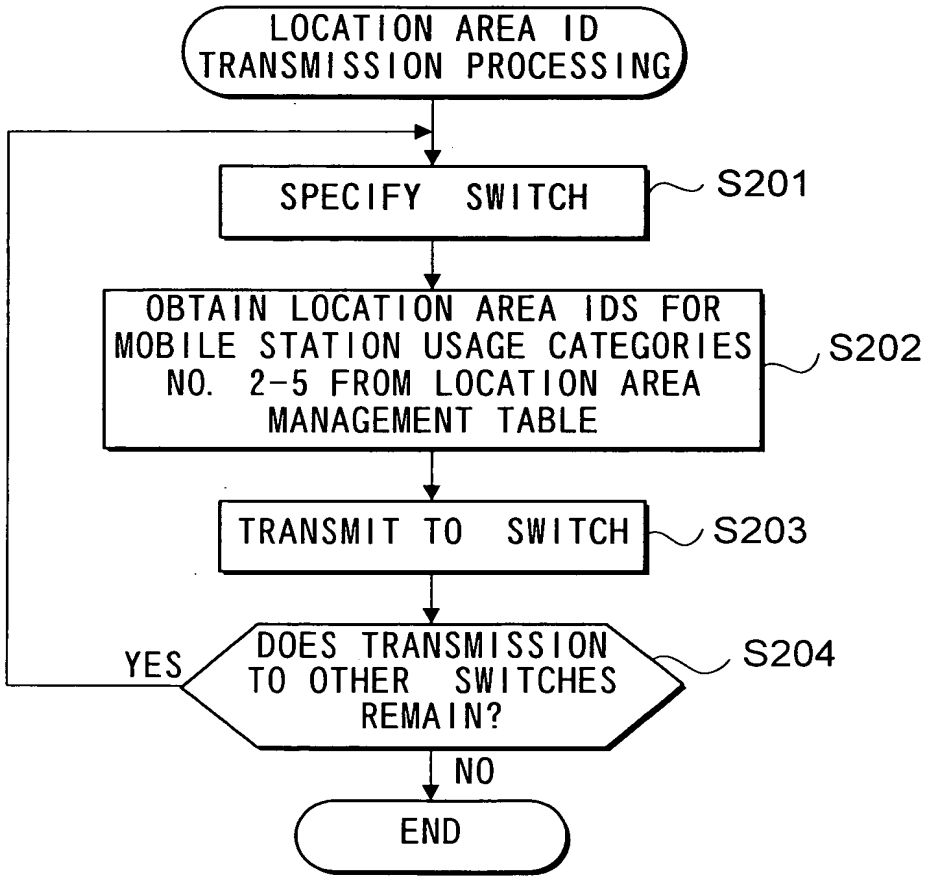
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FIG. 16



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FIG. 17



FOREIGN-96832.1

FIG. 18

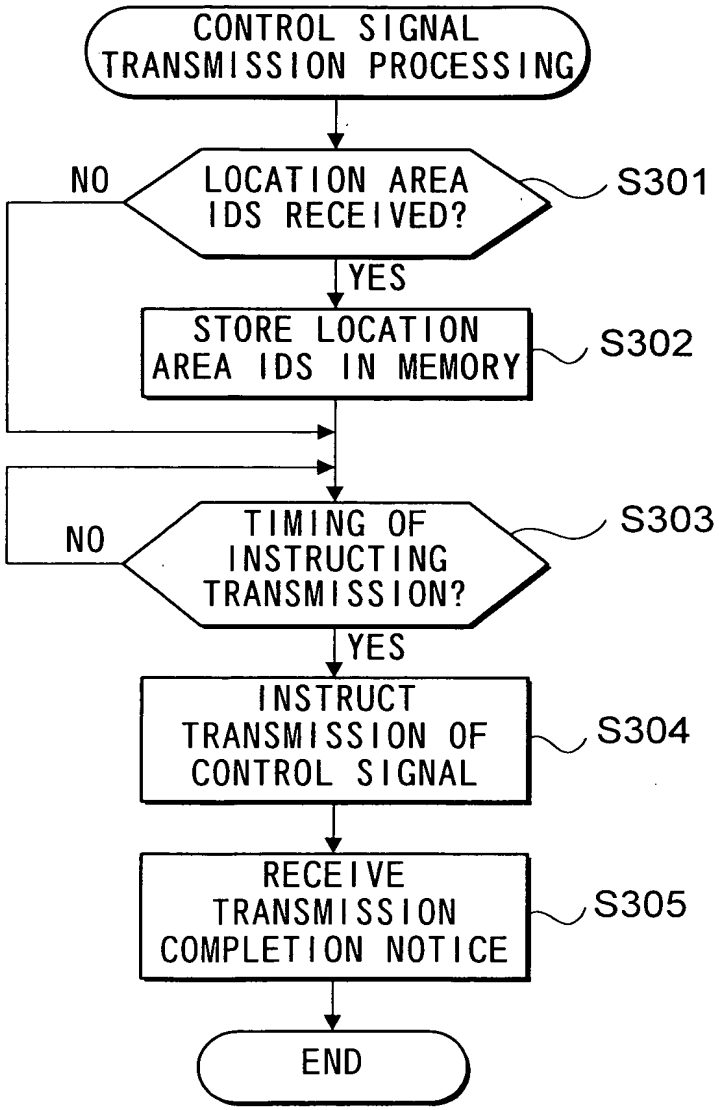
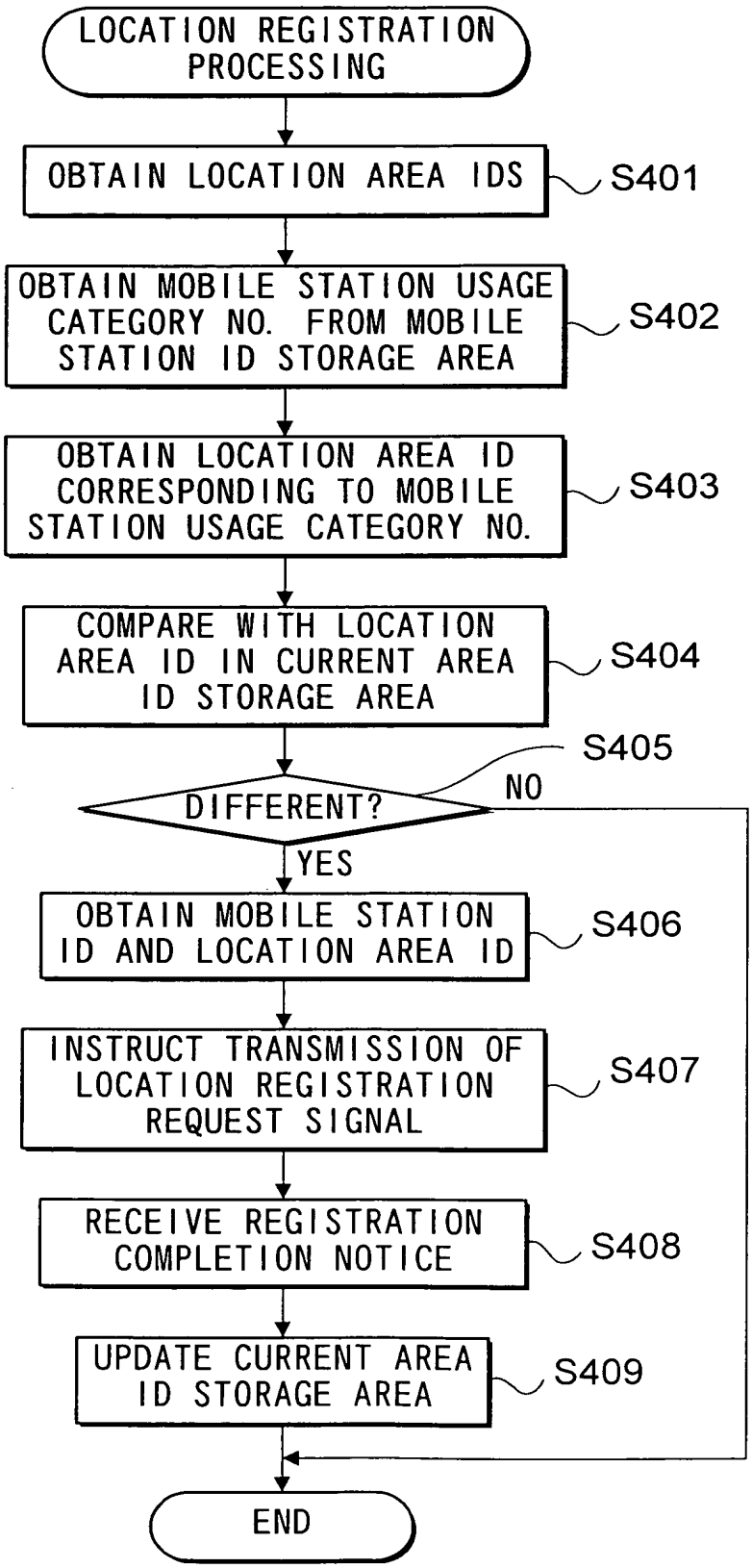

CONTROL SIGNAL TRANSMISSION PROCESSING
NO
LOCATION AREA IDS RECEIVED?
S301
YES
STORE LOCATION AREA IDS IN MEMORY
S302
NO
TIMING OF INSTRUCTING TRANSMISSION?
S303
YES
INSTRUCT TRANSMISSION OF CONTROL SIGNAL
S304
RECEIVE TRANSMISSION COMPLETION NOTICE
S305
END

FIG. 19



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FIG. 20

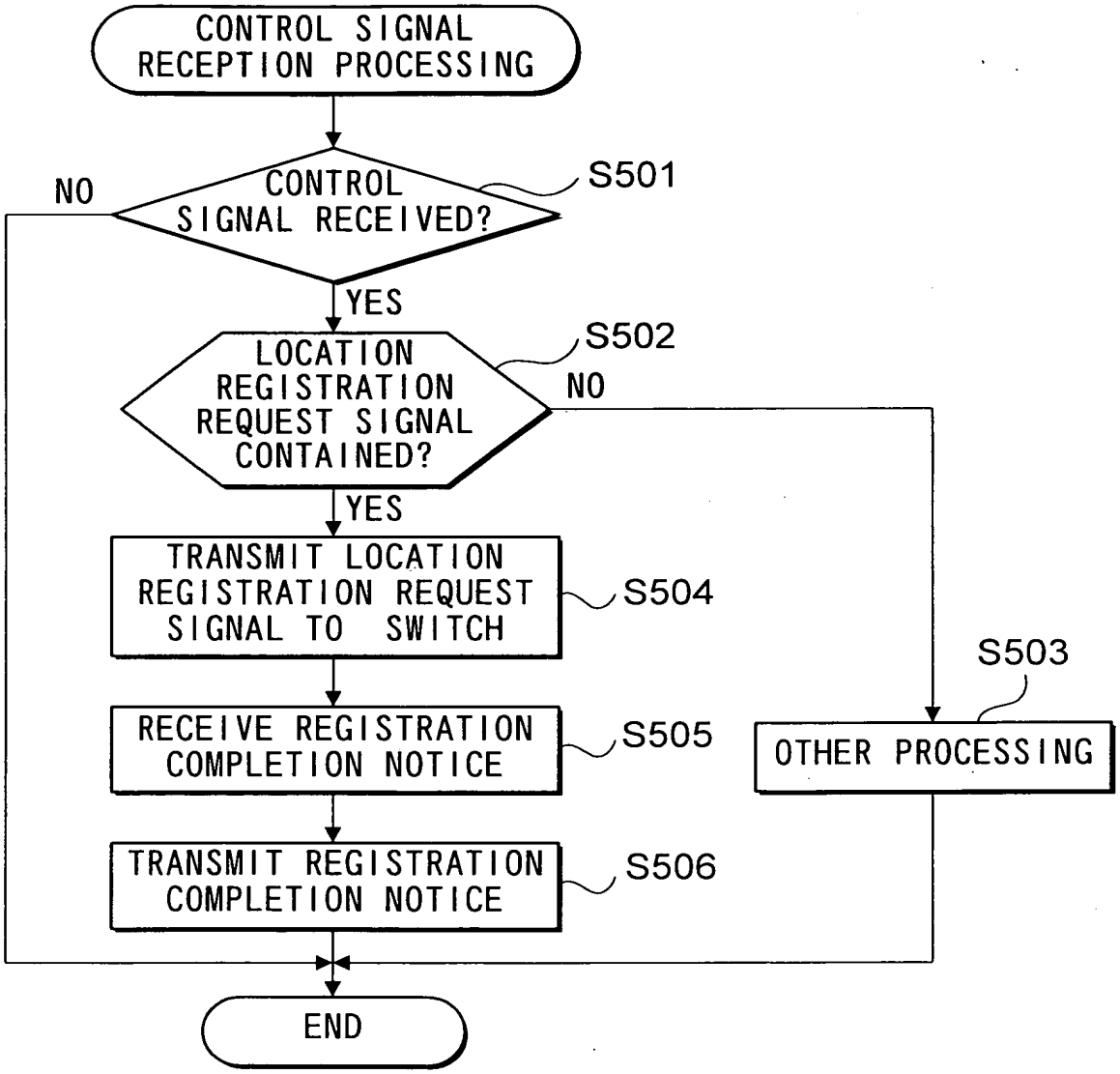

CONTROL SIGNAL RECEPTION PROCESSING
CONTROL SIGNAL RECEIVED?
S501
NO
YES
LOCATION REGISTRATION REQUEST SIGNAL CONTAINED?
S502
NO
YES
TRANSMIT LOCATION REGISTRATION REQUEST SIGNAL TO SWITCH
S504
RECEIVE REGISTRATION COMPLETION NOTICE
S505
TRANSMIT REGISTRATION COMPLETION NOTICE
S506
S503
OTHER PROCESSING
END

FIG. 21

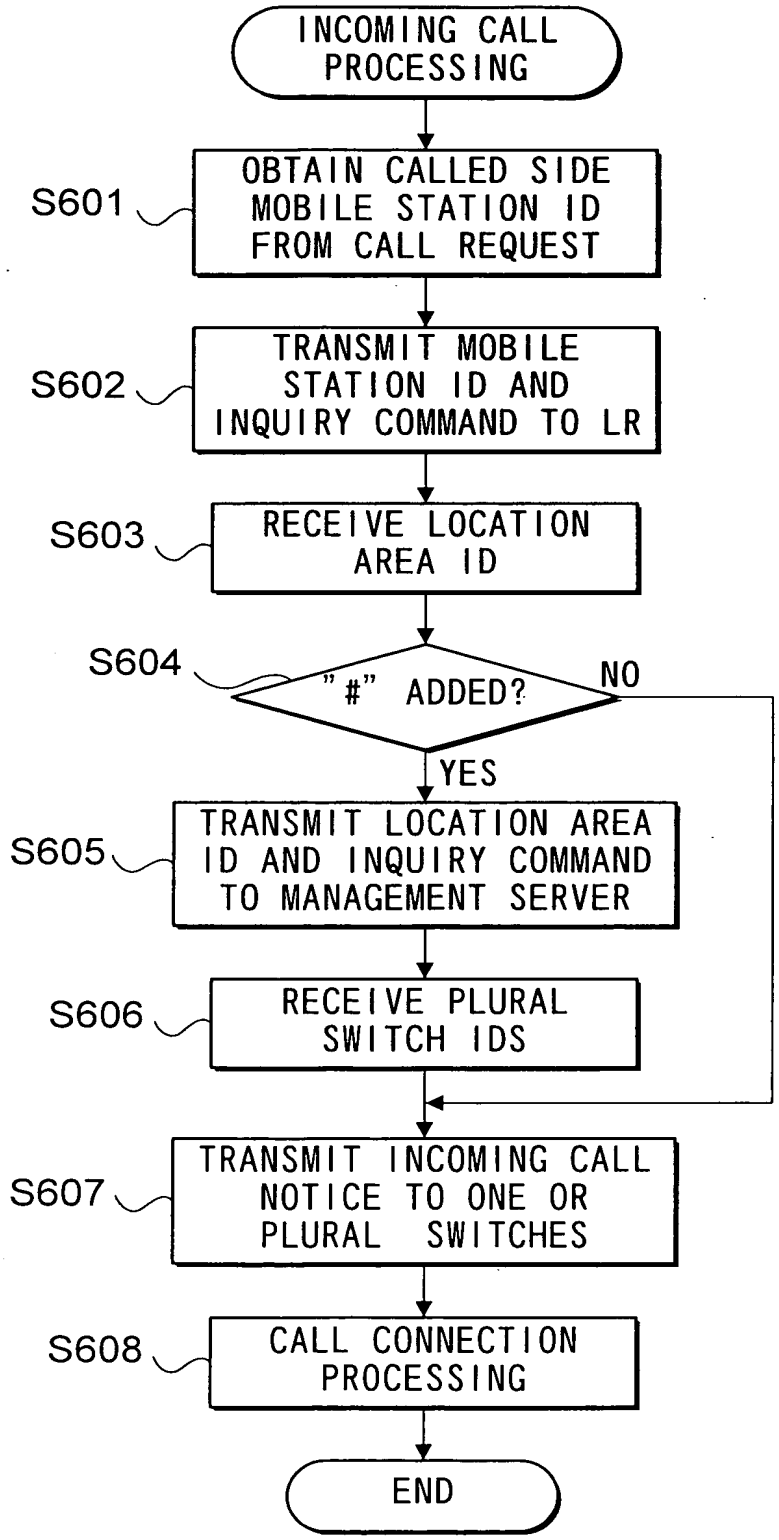

INCOMING CALL PROCESSING
S601
OBTAIN CALLED SIDE MOBILE STATION ID FROM CALL REQUEST
S602
TRANSMIT MOBILE STATION ID AND INQUIRY COMMAND TO LR
S603
RECEIVE LOCATION AREA ID
S604
"#" ADDED?
NO
YES
S605
TRANSMIT LOCATION AREA ID AND INQUIRY COMMAND TO MANAGEMENT SERVER
S606
RECEIVE PLURAL SWITCH IDS
S607
TRANSMIT INCOMING CALL NOTICE TO ONE OR PLURAL SWITCHES
S608
CALL CONNECTION PROCESSING
END

FIG. 22

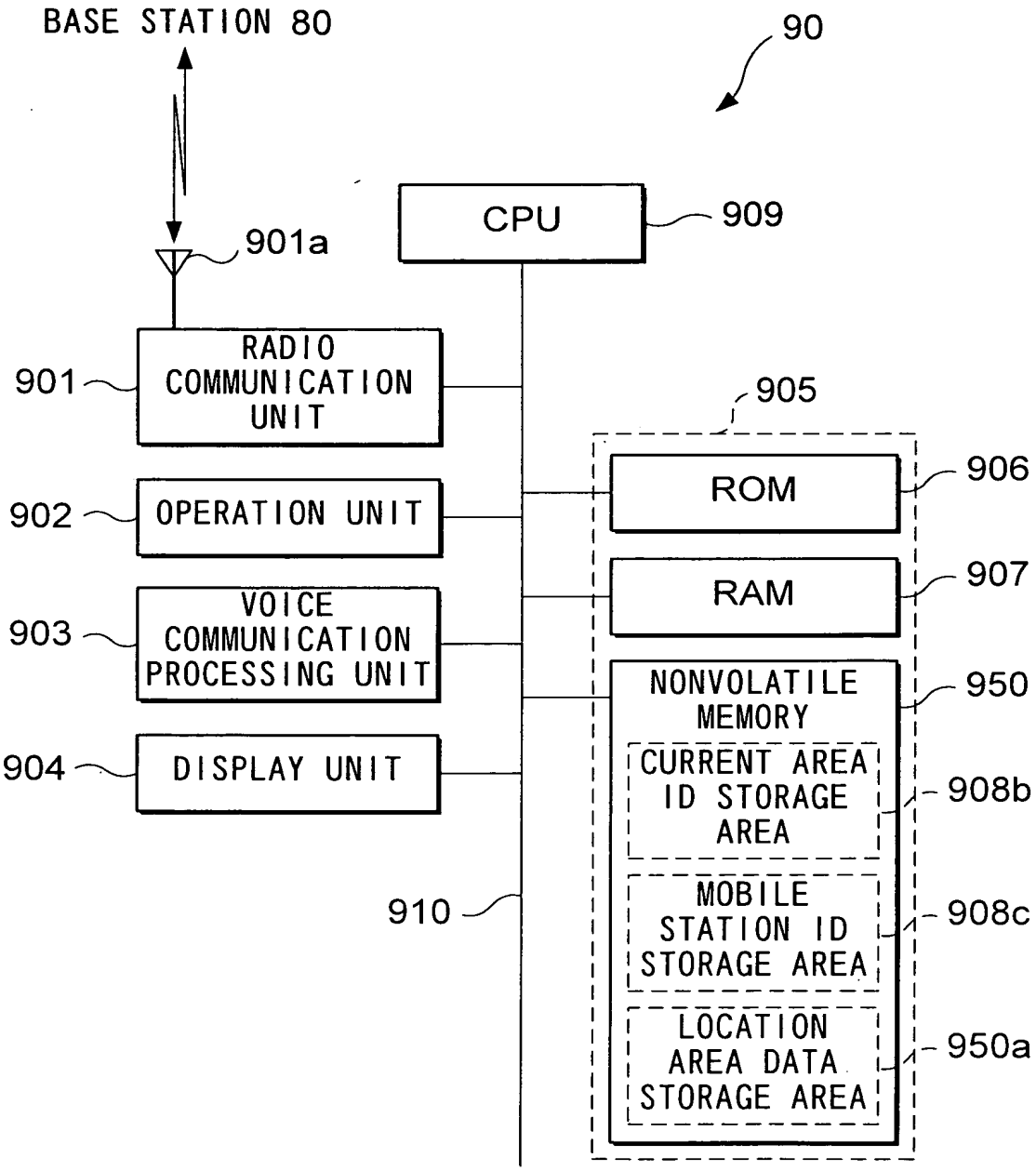

BASE STATION 80
90
CPU
909
901a
RADIO COMMUNICATION UNIT
901
905
ROM
906
902
OPERATION UNIT
RAM
907
903
VOICE COMMUNICATION PROCESSING UNIT
NONVOLATILE MEMORY
950
CURRENT AREA ID STORAGE AREA
908b
904
DISPLAY UNIT
910
MOBILE STATION ID STORAGE AREA
908c
LOCATION AREA DATA STORAGE AREA
950a

FIG. 23

951

MOBILE STATION USAGE CATEGORY NO.	LOCATION AREA ID	SWITCH ID
2	#201	001、002、007、008
	#202	003、004、009、010
	#203	005、006、011、012
	#204	013、014、019、020
	#205	015、016、021、022
	⋮	⋮

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FIG. 24

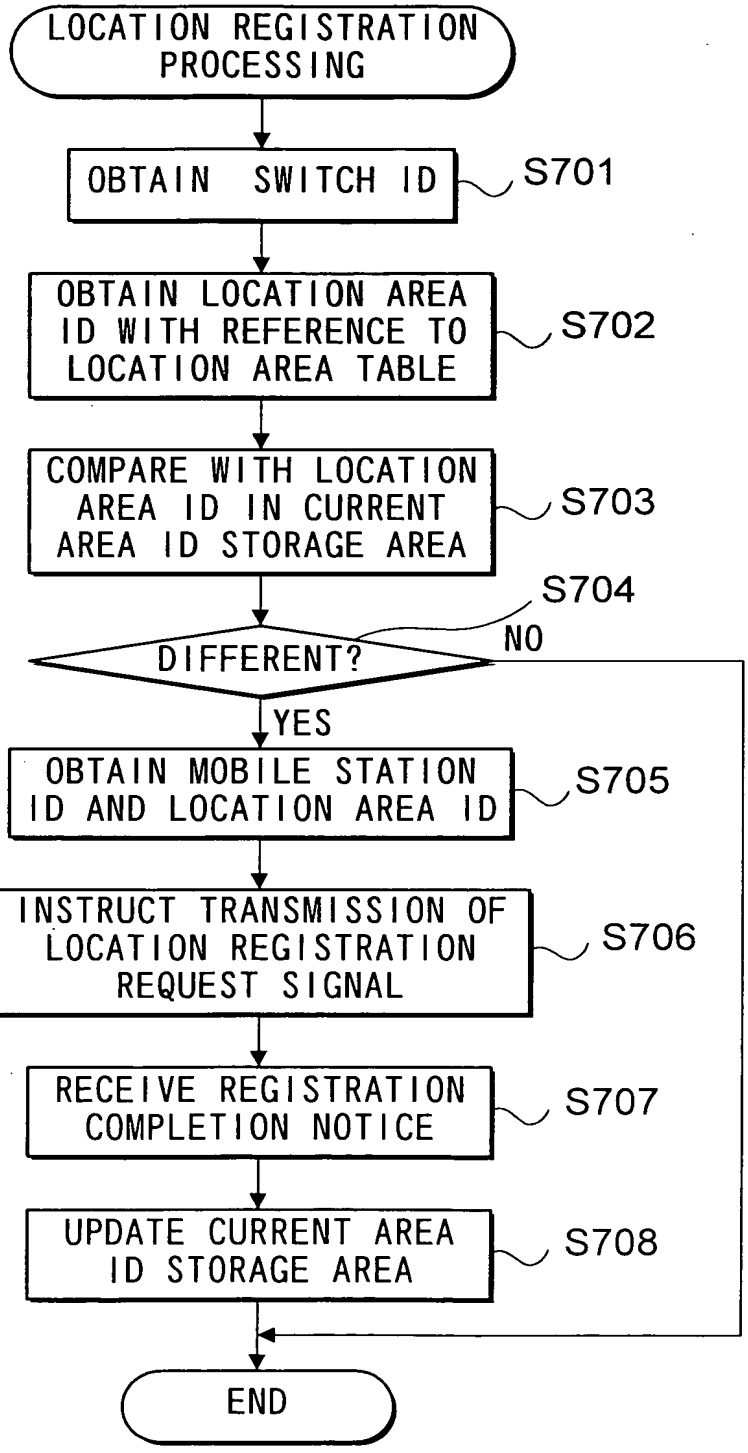

LOCATION REGISTRATION PROCESSING
OBTAIN SWITCH ID
S701
OBTAIN LOCATION AREA ID WITH REFERENCE TO LOCATION AREA TABLE
S702
COMPARE WITH LOCATION AREA ID IN CURRENT AREA ID STORAGE AREA
S703
S704
DIFFERENT?
NO
YES
OBTAIN MOBILE STATION ID AND LOCATION AREA ID
S705
INSTRUCT TRANSMISSION OF LOCATION REGISTRATION REQUEST SIGNAL
S706
RECEIVE REGISTRATION COMPLETION NOTICE
S707
UPDATE CURRENT AREA ID STORAGE AREA
S708
END

FIG. 25

960

TIME ZONE	MOBILE STATION USAGE CATEGORY NO.
0:00 ~ 7:00	1
7:00 ~ 8:00	5
8:00 ~ 20:00	1
20:00 ~ 21:00	5
21:00 ~ 0:00	1

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FIG. 26

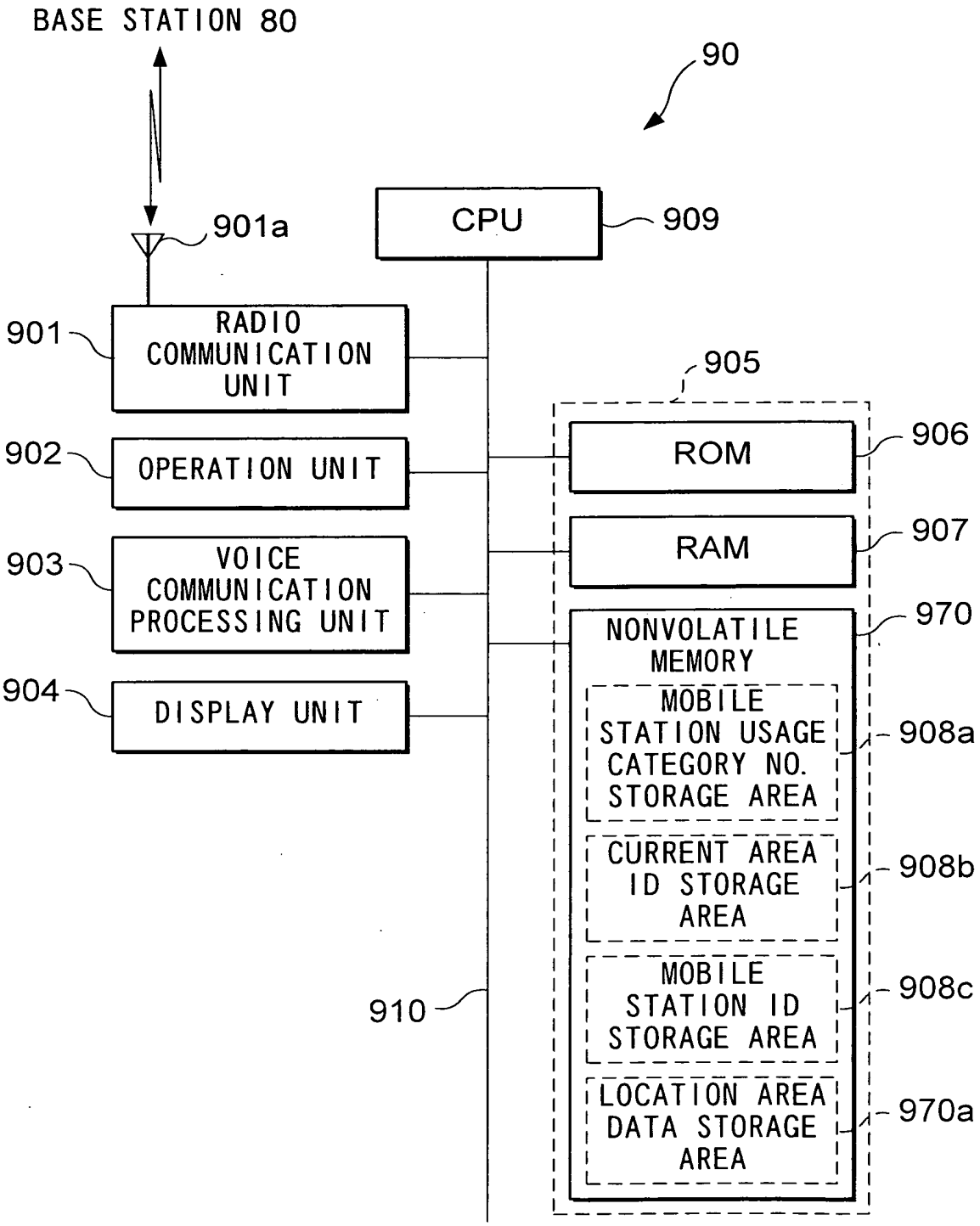
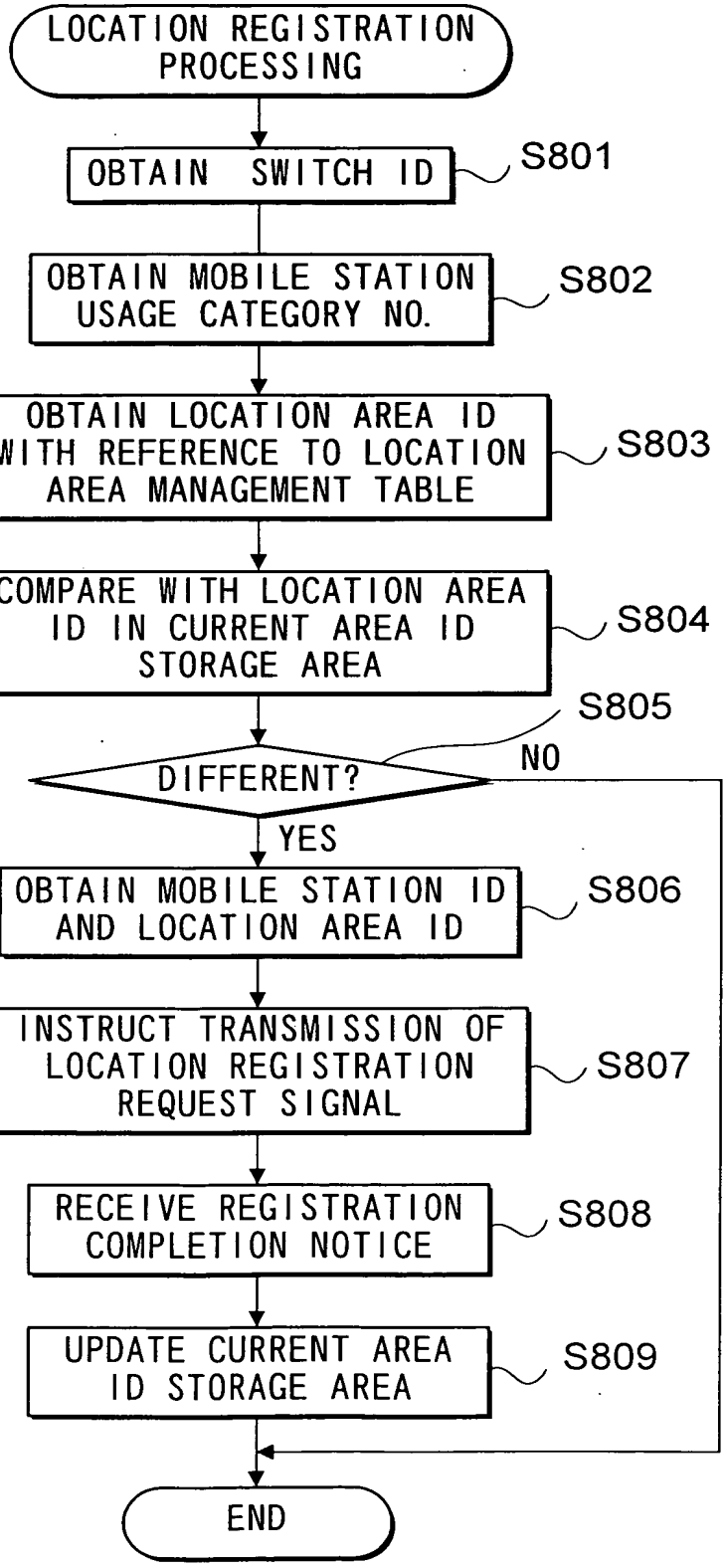

BASE STATION 80
90
901a
CPU
909
901
RADIO COMMUNICATION UNIT
905
902
OPERATION UNIT
ROM
906
903
VOICE COMMUNICATION PROCESSING UNIT
RAM
907
NONVOLATILE MEMORY
970
904
DISPLAY UNIT
MOBILE STATION USAGE CATEGORY NO. STORAGE AREA
908a
CURRENT AREA ID STORAGE AREA
908b
910
MOBILE STATION ID STORAGE AREA
908c
LOCATION AREA DATA STORAGE AREA
970a

FIG. 27


LOCATION REGISTRATION PROCESSING
OBTAIN SWITCH ID
S801
OBTAIN MOBILE STATION USAGE CATEGORY NO.
S802
OBTAIN LOCATION AREA ID WITH REFERENCE TO LOCATION AREA MANAGEMENT TABLE
S803
COMPARE WITH LOCATION AREA ID IN CURRENT AREA ID STORAGE AREA
S804
S805
DIFFERENT?
NO
YES
OBTAIN MOBILE STATION ID AND LOCATION AREA ID
S806
INSTRUCT TRANSMISSION OF LOCATION REGISTRATION REQUEST SIGNAL
S807
RECEIVE REGISTRATION COMPLETION NOTICE
S808
UPDATE CURRENT AREA ID STORAGE AREA
S809
END